



## SAN BERNARDINO MICROWAVE SOCIETY, Incorporated

FOUNDED IN 1966

A NON-PROFIT AMATEUR TECHNICAL ORGANIZATION DEDICATED  
TO THE ADVANCEMENT OF COMMUNICATIONS ABOVE 1000 MC.

### W6IFE Newsletter

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The 5 **October** 2000 meeting of the SBMS will be about 47 GHz. The SBMS meets at the American Legion Hall 1024 Main Street (south of the 91 freeway) in Corona, CA at 1900 hours local time on the first Thursday of each month. Check out the SBMS web site at <http://www.ham-radio.com/sbms/>.

The Prez Sez: For the October meeting we have a special treat. One of the experts in the upper microwave bands in Japan will be visiting in the area and will come to the October meeting. Mr. Narusawa has built several successful 47 GHz transverters and will bring one along to demonstrate. He will also bring along documentation so that it can be copied. (pictures and schematics.) The units can be made fairly easily on a Unimat lathe out of commonly available metal parts. He is a very interesting man with lots of experience in microwaves and ATV.

Some of our own members will also present what they are doing on the 47 GHz band and hints on what to do and not do, as well as what some of the problems are.

Lastly, there will be a review of available 47 GHz modules that are will allow experimenters to get on the band inexpensively. Examples will be there and they will be available to order. There are two modules. The first is a

dual transverter without a synthesizer, but with a multiplier, mixers, amplifiers and circulators. It requires some modification but it can be an excellent transverter. The second unit is simpler in that it is a multiplier and mixer. It can be used with a 15 GHz oscillator and circulator to provide communications on the 47 GHz band. It is also inexpensive.

All in all it should be a great meeting. Let your friends know!

Hope everyone enjoyed the 10 GHz and up contest. NOW TURN IN YOUR LOGS! Even if we don't win the contest, we field more stations than any other club. However, they won't know it unless you turn in your log. "But I only made one wide-band contact." You would be surprised how great it feels to see your name in the listing. Besides it is an easy score to beat next year! 73, Doug K6JEY

I have just updated my web page with microwave contest pictures and station pictures.

<http://hale.pepperdine.edu/~dbmillar/hamradio/hamradio.htm> Doug, K6JEY DM03wt

Scheduling-

2 November Nanusawa's gear on 74 GHz and up with the last of the video

7 December 1296 MHz EME

4 January 2001 TBD

1 February 2001 TBD

Wants and Gots for Sale

Want tech info for HP8551B spectrum analyzer RF and display sections and the HP8441A preselector Kurt 310-718-4910 or k6RRA@gte.net

Want HP8690a/b mainframe sweeper chuck chuckswed@juno.com

For Sale HP5245 counter \$50 some plug-ins call for list Dick rabremer@juno.com 714-529-2800

For Sale Tek 492 spectrum analyzer up to 21 GHz \$2500 works perfect Sam 714-523-0537

For Sale 18 inch DSS dishes w/o mount hardware John KJ6HZ 714-761-0242.

Hi Bill, Just a note on the 10 GHz Contest opens from one of your out of state members.

While my wife was attending her high school reunion in Denver, I was able to break away for a short period and took my tripod mtd 1W xcvr (18" off set fed dish) up to Mt Evans, which is west of Denver.

By pre-arrangement, I met John, WD4MUO, up there who was also going to operate the contest - but seriously. So he acted as my mentor, as I'd not made any 10G QSO's before. Everything worked perfectly and in the 5-6 hours I was able to be up there I managed to work 45 Q's in 6 major grids. It's amazing what you can work with a 9K+ foot tower under you (14,130' ASL). By the end of the weekend John had worked in excess of 200 Q's, and Bill, K0RZ, as a rover had worked 175.

Needless to say my battery is now charged about 10 GHz, and I am now looking at AZ mtn tops. Also, I would like to consider going to a high spot in western AZ to try to have a go with the So. CA group. Do any of you have any ideas or proposals? One of these times I'll have to get over to one of your meetings.

73 to all, Chuck W7CS 40 miles NE of Tucson

Jeff KF6PBP: I have placed some select photos from the contest last weekend online at:

[http://www.wavelen.com/pics/arrl\\_10ghz\\_2000/10ghz\\_and\\_up.html](http://www.wavelen.com/pics/arrl_10ghz_2000/10ghz_and_up.html) There are also some MPEG movies there although they are quite a bit larger than the photos. Click on any picture and you'll be able to view a 1024x768 resolution version. All of the photos were taken with a Sony DSC-S50 digital camera by myself, Tony KC6QHP, or Royce KF6PEO. Santa Barbara was a great place to spend the weekend and I enjoyed working many people on the mailing lists on 10 GHz. I just added a password to my microwave mailing list archives to keep the Cactus frequencies and home phone numbers posted there protected. I am e-mailing the SBMS and WA1MBA lists so that hams who are subscribed to the lists will be able to access the archives. The login information is :username: uwave password: ghz Feel free to spread this around to other members of the amateur radio community who are interested. The webpage is at <http://www.infosite.com/~jkeyzer/uwave/> 73's Jeff KF6PBP jkeyzer@ucsd.edu

PV Beacon- Gary K6ENS and N6CA installed the PV X-band beacon today (Sept 4) and it is running. Elevation is about 1100 feet (I will get exact number) and frequency is now less than 10 Hertz high from 10368.300 MHz. It used to be 65 Hertz low..... K6OW donated the 27 feet of elliptical waveguide Thanks!!! and Gary K6ENS has kindly provided again the site for the beacon, Thanks...again!!! There will be some pictures (taken by K6ENS) taken from the tower top up-loaded to the SBMS site in a few days. Reports so far are slight improvement over old installation on PV. In other words it's loud.... We are up 3 db in antenna gain (16 dbi horz omni) and 27 feet of wave-guide instead of 100 feet. More info later. 73 Chip N6CA

W1LP/MM Fall Plans & 10 GHZ I'll be flying out to Los Angeles this Friday and rejoining the ship when

it arrives in Long Beach. We'll spend about 2 weeks on the west coast before sailing back to the Gulf of Mexico. I should be stuck in smogville for the Sept. contest. I'll be on the ship until mid-November this hitch.... I will also have 10 GHZ this trip, 1W and a 20-db horn. This should be interesting to check out the Baja duct on this band.....Last but not least, I'm slowly making my way through all the QSL cards from this spring. I should get caught up in the next month..... (Only a shopping bag full left).

73, Clint - 6M, 2M, 432, 10 GHz: W1LP@aol.com

Thanks to Bob, KF6KVG, there are 4 beacons on Loma Prieta, CM97AE, at about 3500 ft asl. 3 are pointed northeast -10,367.990, 24,191.977, and 47,034.00 MHz. Antennas used are small feedhorns. Pointed to the southeast is 24,191.990 MHz, using 12 in antenna, eirp about 53 dbm. Reports can be sent to me. Will, W0EOM@aol.com Santa Clara, CA

Reports from the 2nd 10 GHz and Up Contest Weekend-

Frank, WB6CWN: I started Saturday morning on Mt. Soledad, DM12ju, in Dan Diego. Thanks go to local John WB6BKR for recommending a location on the grass to set-up. As the hot day passed, I learned this spot-the one closest to the sidewalk-also got the most "what are you doing?" questions from the Soledad visitors, but that's another story. Between the visitors, I had 22 QSOs from Mt. Soledad, including a 500 mile exchange via aircraft scatter with WA6CDR on Mt.St. Helena, and a 400 mile contact with Ron, K6GZA on Mt. Oso. Saturday afternoon I moved to the Laguna Hills, DM13co, and worked 11 more stations. Signals had more QSB in the afternoon but remained good. At this stop, a 430 mi (641 km) aircraft bounce contact with WA6CDR was made. On Sunday I moved to Saddle Peak, DM04qb, and made 24 more contacts including the third QSO with Robin via aircraft bounce. These contacts took some patience and battery reserve as the technique is to just keep transmitting until heard, then keep transmitting until copied. Robin is very skilled at this. I enjoyed working high desert Rovers K6OW and WA6CGR several times. It seems as if they can talk to anyone from anywhere. I was also tickled to detect KR7O's 5 mW carrier from atop a building in Fresno 200 miles distant. Signals on Sunday

seemed even more fluttery, but still good. I had no major equipment problems, enjoyed the clear but hot weather, and had a great time mountain topping in Socal! Frank WB6CWN

.Kurt, K6RRA- The 1st weekend was 3 points less than a total disaster, only made 2 contacts each day. But in the following cpl of weeks both "body" & rig recovered enough to fight the fight the 2nd weekend. the rig = M/A Comm. w/ 250 mw out. Ant = 27" dish (+34 db) fed w/ Andrews 1/2" hard line (-1 db), IF radio = tr-9000. NOW the numbers: 33 contest QSO's 21 Unique 2100 pts. 2951 km's Total 5051.9 pts. 5 grids from Signal Hill (VUCC) on Saturday Best DX was 217.9 km., DM03xq to CM94vl 73 de Kurt

Chuck W7CS --John, W7BBM, and I were on Smith Pk, about 75 miles East of Blyth (DM34hb)

which is 5200+ feet high. Our success to the west was quite limited, I believe due to poor atmospheric conditions but also there appear to be several north south ranges in between the west coast and Smith Pk.

But thanks to Ed, W6OYJ, and Lanny, W6AT, who very graciously moved to better locations with shots to us, we made several QSO's - this helped our confidence immensely. (Lanny even said he'd drive to the bottom of our hill to work us!!) The sigs were much stronger than those on 2M SSB. I learned a lot. Mainly don't depend on repeater owners to appreciate microwave site requirements for dx operations. Also here in the outback (without beacons) you need excellent bearing information. And in the future, I'll personally scout the site beforehand. All in all I felt the little 1W xcvr and 18" dish did very well with no Murphys or failures. Next time I'll hopefully have a better site and considerable more ERP. But I don't want to just wait for a contest before I head for the hills. If you have any "activity" days/weekends, let me know. I especially want to thank Robin, WA6CDR, for his patience in having to reconfigure CACTUS so often so that we could use it effectively. W6AT and I also found that 50W of 2M SSB and a small beam worked quite well. TNX to all. 73 Chuck W7CS

Ed, W6OYJ - Saturday I operated from several locations, starting from home in San Diego. Worked WB6BKR on Mt Soledad on both 10 and 24 GHz (3 km dx). Moving up the coast I made 22 more 10 Ghz QSOs from DM13ia, DM13ib, and a bunch from Signal Hill DM03wt where many SMBS members were grouped. Returning south toward San Diego I worked W6AT on Heaps Peak from a mall parking lot with my mobile 10 GHz omni antenna. Nearing San Diego worked KF6PBP on Soledad at 2 km on both 10 GHz and 24 GHz. Sunday I found the way blocked to my planned site by a locked gate. So I headed toward the Laguna Mtns, DM12TU and was elated to work Chuck, W7CS on Smith Pk Arizona at 309 km (grid square distance). "S9" signals on 10 GHz ssb from his grid DM34hb. Also worked Lanny, W6AT in DM23, as well as N6XQ and WB6BKR in San Diego. Unfortunately that site has zero coverage toward PV, Frazier, or any other stations in the LA area. Blocked by The Cuyamaca Mtns and many other peaks. Total of four QSOs on Sunday. Then my car battery exploded!! But that is another subject. Thanks to the

12V battery for my rig, and my jumper cables draped under the hood, I made it safely home. 73s Ed

Doug K6JEY -This was by far my best contest and this weekend was great! On Saturday I went to the Pomona Swap and got a 65AH 12-volt gell cell and put it on charge while I went to Signal Hill. There were seven of us up there! It was fun to tag teamwork stations. My best DX was Sta. Ynez. Not much

on 24 ghz wb. Sunday Helen (my wife) and I went to Frazier Pk. Nice drive and good location. Found three other stations there already and joined the crowd under the tower. Best DX was Robin at 540 km. What a thrill! BTW I think Robin should get a medal for not only tending his own station, running the Cactus system but also for helping any and all to make QSO's all day long. Thanks Robin! All in all my totals for the contest are approximately: 21 Stations 95 QSO's (9 on 24 ghz) More than 14,500 points. 73, Doug

Robert KR7O/YB2ARO, DM07ba/OI52ee (ex. N7STU)-From DM07ba home, clear horizon to the north, dish at ground level. Unique stations = 10 Total contacts = 16 Distance points 2322.6

QSO points 1000 Total points 3323 Equipment: Downeast Microwave transverter, power output unknown (but less than 5 mw). 18" DSS dish. Minimal station hears well. Definitely need an amp and a lot of fine

tuning for next year. First time on 10 gig (except for a couple of token wideband contacts). Thanks to K6KLY, W6BY, WA6CGR, K6GZA and K6HLH for their assistance in getting the station working and to WA6CDR for running liaison for me. I would have thrown in the towel Saturday afternoon without Robin's and Ron's assistance. 73, Robert KR7O/YB2ARO, DM07ba/OI52ee (ex. N7STU)

Ed, AL7EB- Well the weekend is history and 360 miles have been added to the car traveling to Anchorage for the annual Anchorage ARC/ARRL Hamfest [our big one!]. My effort for the 10G+ weekend was to provide a microwave demo for the hamfest. In short: Nothing worked--Murphy won! Of course I should have started sooner than one week before the event to assemble the Gunnplexer transceiver.

But it was finished last Friday, and promptly blew up a 7805! Thus no 30 MHz receiver [I am building the pcb that was produced a few years ago and distributed by Chuck, WB6IGP. Before being neatly [sort of] installed in a nice cabinet the pcb played just fine. The coil I selected maxed out at 20 MHz but that was OK. I'll eventually get one with the right inductance for 30 MHz. Got sensitivity of ~1.5 uv at 25 KHz bw...that seems reasonable.

I got one of the HP-430C's working and was able to detect the gunn's RF [est. 20 mw]. I used a HP-532 wave meter and found the freq close to 10.250 as originally ordered from M/A [in 1979]. Varied the 10 turn varactor helipot and it tuned up to about 10.310. Next, I dived in, gritted my teeth, and began to adjust the mechanical tuning to move the Gunn to 10.348 so that it could detect the 10.368 signal of my DEMI xvtr. Murphy hit. The BNC connector on the thermistor head was apparently loose and rotated. No more thermister. Next day, I tried the other thermister head using a different BNC cable and the meter was erratic; wouldn't zero. More troubleshooting and found that the coax cable had a bad shield connection to one of the BNC's. Got that fixed and the meter now behaves, but no RF detected:

Now it was time to drive to the Hamvention. Spent late in the evening in the hotel room with solder iron repairing the blown 7805. Next day applied power---blew 7805 No. 2. Double damn! So Saturday's demo was a talk about what this stuff does when it is working...really lame. Had the Banquet Saturday night so no repair work was done. Sunday, I run to the electronics store before the hamfest opens and buy 7805 No. 3. The plan: get the main Gunnplexer working with a new regulator and wire the other Gunn with 6v from a battery and connect a tone generator to the varactor and hunt for its signal. Not a bad plan to save some face. Got the 7805 installed and the unit back together, applied power, and nothing! Must have messed up the +12v trace as there is no power anywhere on the board [Oh, I found out why the 7805 blew, so that wasn't it---I wired pin 6 from the TDA7000 to the grounded side of the 1-8 pF variable capacitor which shorted the 5v buss]. There is now one hour left to the hamfest. End Game...Time out! Anyway, the hams visiting my table now know the "truth" about the "fun" of microwaving. Buy lots of 7805's and smell lots of solder fumes :-). Oh and buy lots of thermistors.

What I really regret was that Gordon West, WB6NOA, was at the hamfest and wanted to take part in the 10 GHz QSO. Maybe next year. 73, Ed

PS: I did pick up an HP-432A power meter in pretty nice shape so now looking for the thermister head and cable [what else?].

San Bernardino Microwave Society is a technical amateur radio club affiliated with the ARRL having a membership of over 90 amateurs from Hawaii and Alaska to the east coast. Dues are \$15 per year which includes a badge and monthly newsletter. Your mail label indicates your call followed by when your dues are due. Dues can be sent to the treasurer as listed under the banner on the front page.

If you have material you would like in the newsletter please send it to Bill WA6QYR at 247 Rebel Road Ridgecrest, CA 93555, bburns@ridgecrest.ca.us, or phone 760-375-8566. The newsletter is generated about the 15th of the month and put into the mail at least the week prior to the meeting. This is your newsletter. SBMS Newsletter material can be copied as long as SBMS is identified as source.

San Bernardino Microwave Society newsletter

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